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SESSION 1

Sub-Theme: Financial System Challenges

Regulatory Reform and De-Risking in Global Banking: The Case of Caribbean Banks

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This paper investigates the effects of the recent changes in the global banking environment and the de-risking phenomenon on banks' cost and income structure. Using quarterly information on five banks that operated in Barbados over the period 1996-2016, we examine how different components of income and expenses have been affected by a number of events linked to the de-risking phenomenon (such as FACTA, bank regulatory reform, and court announcements). Our panel regression analysis, which allows control for bank-specific and macroeconomic determinants, suggests that bank profitability has been negatively affected by the events that have taken place in the advanced economies since 2010. The results show evidence that higher non-interest expenses explain a good part of the reduction in profitability, particularly, in the form of higher expenses on wages, professional services, and other non-interest expenses. Moreover, it appears that banks have partly counteracted the cost increases with higher interest margins.

Financial Interconnectedness in the Caribbean: Challenges for Financial Stability

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The global financial crisis of 2008–09 and, in the Caribbean, the crisis stemming from the collapse of Trinidad and Tobago–based CL Financial Group in 2009, raised awareness of risks to financial stability from financial interconnectedness. Even though interconnectedness can promote international risk sharing, competition, and efficiency, it can also spread adverse shocks in unexpected directions, and sometimes in an unexpectedly virulent manner. For instance, when CL Financial Group, which had assets of US$16 billion at the end of 2007 (about 30 percent of the Caribbean's regional GDP), collapsed, the adverse impact spilled over to all the Caribbean Community and Common Market (CARICOM) member states except Jamaica and Haiti, with claims on CL Financial as high as 17 percent of GDP in the Eastern Caribbean Currency Union (ECCU).

Against this backdrop, the IMF launched the Caribbean Regional Financial Project (CRFP) in 2013 to gain a better understanding of financial interconnectedness in the region to determine the level of resilience of the regional financial system to financial and macroeconomic shocks. Central to achieving these aims was the collection of unique data on financial exposures among banks, insurers, and sovereigns in the Caribbean, which facilitated the mapping of financial interconnections and simulations to assess financial spillovers. This chapter lays out the key findings of the CRFP exercise, including a granular assessment of the vulnerabilities in the financial system based on network simulations and policies that could help improve both national and regional financial regulation and supervision. The chapter provides an overview of the Caribbean financial system, followed by a discussion of financial integration in the region based on a mapping and risk analysis. Based on this analysis, the final section contains a discussion of the priorities for financial regulation and supervision for the Caribbean region.

Structure and Stability of the Jamaican Payment System: Assessing Systemic Risk in the JamClear-RTGS System through Network Analysis & Simulations

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This study seeks to examine the network topology and stability of the Jamaican payment system during January 2014 and December 2015. The operational resilience of payment infrastructures is important to maintain financial stability as disruptions in routine payment flows can result in unwanted risk exposures. To better understand the financial network and minimize systemic risk in Jamaica, this paper examines the network topology of the JamClear-RTGS in periods of tight liquidity and normal liquidity, identifying systemically important payment institutions (SIPIs) as well as uses counterfactual simulations to quantify the contagion impact of the inability of SIPIs in submit payments. Results indicate relatively high connectivity with over 50.0 per cent of potential payment flows being realized. Notably, commercial banks dominated the strongly connected sub-group of participants. Commercial banks were also the most influential and systemically important participants based on degree centrality. Closeness and betweenness centrality, however, highlighted the importance of primary dealers within the network. Increased concentration risk and a lower speed of contagion risk was observed for December 2015 relative to January 2014. Counter-factual simulations revealed a resilient payment system to various participant defaults. Given the network structure observed and the importance of commercial banks and primary dealers within the Jamaican financial system, potential shocks to the payment system network have implications for the formulation of appropriate liquidity management policies.

JEL Classifications Codes: D58, G21, G20, G28

Keywords: Network Topology, Systemic Risk, Contagion, Payment System

SESSION 2

SUB-THEME: FISCAL AND DEBT MANAGEMENT ISSUES

ASSESSING DEBT SUSTAINABILITY IN BELIZE

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Belize has restructured its commercial debt with external creditors three times within a 10-year span, but its debt level remains high and the likelihood of future roll over risks looms. The IMF has recommended a strong fiscal consolidation effort equal to an outturn of 4 to 5 percent of GDP on the government's primary balance account to reduce the debt-GDP ratio to 60% of GDP by 2025. However, the economic, political and social costs of this prescription appear high. In response, the government plans to undertake a more gradual fiscal consolidation path to appease external creditors and to put debt on a sustainable path. This paper examines the outcome of the government's strategy over a 12-year horizon and investigates the size of the fiscal effort that would be needed to reduce the debt-GDP ratio to 60% of GDP in 2028, which is one year before the soft bullet payments on the commercial debt commences in 2029. Utilizing a series of debt-ratio dynamics equations to conduct the debt assessment exercise, the government's proposed strategy, if implemented fully as planned and maintained over the forecasted period, will miss the proposed target. However, a constant primary balance of 2.6% of GDP will hit the desired target. The analysis suggests that government should consider strengthening its planned fiscal consolidation efforts.

Keywords*:* debt sustainability, Belize, debt dynamics

Caution, Watch Your Step: Estimating Structural Fiscal Balance and Containing Fiscal Pressures

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In the aftermath of the global financial crisis of 2008, both developed and developing countries have begun anchoring their fiscal policy on a specific set of rules that target the structural balance in an effort to mitigate cyclical risk and fiscal volatility. Hagemann (1999) defines the structural or cyclically adjusted balance as government's actual fiscal position after controlling for the budgetary consequences of the business cycle and other exogenous factors, such as commodity price movements (Bornshortst et al, 2011). This research reviews the structure and key properties of univariate and multivariate methods for estimating a government's structural fiscal balance. It highlights a number of methodological challenges, including the degree of estimation uncertainty. A combination of approaches is proposed and applied to data to generate estimates for Barbados over the period 2008-2015. Besides the conventional output gap and fiscal elasticities, an assessment is made of other possible non-structural elements that can impact the budgetary position and fiscal policy decision. As a consequence, the output gap adjusted for changes in the terms of trade. A key result is that Barbados' output has been below its potential in more than 10 of the 35 years studied. The calculated structural balance fluctuated between that 10.4 per cent (2013) and 2.4 per cent (2012).

Keywords: Central Bank of Barbados; Fiscal Policy; Small States; Fiscal Rules; Structural Balances.

Domestic Debt Exhaustion: The Robin Hood Trigger

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Governments of the region have developed an over-reliance on raising short and long-term funds through domestic debt capital; namely, the issuing of treasure bills and bonds. Government securities represent a substantial proportion of Caribbean governments' debt profile. Domestic government debt is not a clear solution for closing the fiscal gap. It carries its own risks and burdens the economy through its potential impacts on the financial system. The main thrust of this study is twofold. First it attempts to show that the supply of domestic securities will exhaust its demand (ie. the domestic debt exhaustion theory). Second, it investigates the use of domestic public debt (i.e. public investments) which it argues are rather based on arbitrary decisions, in some instance. Public debt and investment is undoubtedly central for growth and development, however government investments are not always productive. It fuels government's liquidity risk and fatigue government willingness to repay. This situation can cause a debtor to stops making payments on its domestic debts but proceed to contract further debt. Continuous financing with little or no return on investment is a significance risk. Potentially, these can activate the Robin Hood Trigger (i.e. the creation and use of sophisticate and innovative tax mechanisms to raise revenue).

The most effective allocation of public resources should be linked to its rate of returns. In reality, decisions on the volume and allocation of public investments are rarely based on a systematic assessment of their returns. This paper employs concentration ratio and rates of returns (i.e. value-at-risk) techniques to domestic debt (specifically, securities) and fiscal data of the Eastern Caribbean Currency Union countries for the period 2004-2016. The results of this paper can be useful for Caribbean Governments as it presents a practical application to the underlining issues. It also highlights various methods and makes some proposals regarding the levels of concentration government should place on difference sectors of the economy when contracting domestic debt to fuel investments.

Keywords: domestic debt, fiscal policy, securities market, Caribbean, financial system, concentration limits, value-at-risk.

SESSION 3

Sub-Theme: Economic Structure and Performance

Credit and Economic Growth in the ECCU: A Threshold Approach

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The macroeconomic role of credit has been continuously deliberated within the realm of finance. In the Eastern Caribbean Currency Union (ECCU), the relationship has been examined in previous policy analysis and the behavior exhibited by commercial banks within the ECCU has led to questions of spurring economic activity through credit channels. Consequently, the authors evaluate within the context the ECCU, the threshold level of credit which spurs significant economic growth. This paper uses a pooled OLS regression to determine the short and long run relationship between credit and economic growth and further examines by means of a panel threshold regression, the thresholds which are significant to this credit growth nexus. The authors aim to provide policy makers with a deeper insight into the behaviour of credit in the absence of traditional monetary policy mechanisms such as open market operations.

Is Current Account Deficit in Small Very Open Economy a Healthy Economic Characteristic?

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The engine of growth in the small very open economy (SVOE) is investment in the tradable sector. Such economies depend for their growth on investment in those internationally tradable activities in which they have or can create a comparative advantage. There is no scarcity of finance for investment in these activities, because they are seen to be profitable by international investors, who compete with domestic savers for these investment opportunities. As a result, it is the inherent profitability of the investment which sets an upper limit on the rate of investment in tradables, not the domestic savings rate. If domestic savings are insufficient, the inherent profitability assures an unlimited supply of foreign finance to close the gap. Since national savings and investment define the state of current account, investment in the context of SVOEs dictates by and large the negativity of current account also known as current account deficit. In this context, policies to reduce the deficit of current account of the balance of payments may in fact reduce the potential growth of SVOEs, and a reduction in the current account balance does not necessarily indicate an improvement in economic performance. On the contrary, a deterioration of the current account may well be an indicator of an increase in potential growth, if it reflects and is balanced by new inflows of foreign direct investment.
Using essentially the relationship between savings, investment and the current account balance, the present paper attempts to show analytically and empirically that current account deficit is rather a healthy economic characteristic of the SVOE, contrary to large and more diversified economies where such a deficit generally epitomizes some economic difficulties.

Elementary algebra, data analytics, correlation analysis and advanced regression methods are of interest to fulfill the objective of the study. For the empirical part, a set of SVOEs are selected in the period from 1970 to 2014. The study adopts a pure time series approach as opposed to a panel data approach for a certain number of pertinent reasons.

Estimation of the Pass-Through Effects of International Commodity Prices on Domestic Inflation in Barbados

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The inflationary process in Barbados is influenced largely by foreign price inflation. Previous research has focused primarily on the determinations of retail price inflation in Barbados and not explicitly on the estimation of the speed of pass-through effects of international commodity prices on domestic inflation. Using quarterly data for the period 1985:Q1 to 2015:Q4, the study estimates a VECM, generalised impulse responses and variance decompositions to capture the speed and magnitude of international commodity price fluctuations. The findings indicate a relatively slow speed of adjustment of domestic prices from disturbances away from equilibrium. International energy prices were found to exhibit a faster rate of pass-thorough in the short-run, while the reverse was found for international food prices in the long run.

SESSION 4

Sub-Theme: Climate Change and its Impact on Development

A Panel VARX Analysis of Debt and Natural Disasters in SIDs

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This paper investigates whether there is statistical evidence to support a negative impact from natural disasters on SIDS' debt to GDP ratios. We study the difference between SIDS and non-SIDS in an effort to gauge whether size matters. This approach differs somewhat from the traditional literature, which has focused primarily on differences in development, educational attainment and institutional development, when assessing the impact of disasters. Using a PVARX specification, our results suggests that debt to GDP ratios increase in SIDS following storms and floods, and in contrast to Acevedo (2014), that the change in debt ratios are statistically significant. We also conclude that floods lead to faster debt accumulation than storms, and that debt increases less in non-SIDS, mainly because of their stronger macroeconomic fundamentals. The latter is observed when examining the significance of natural disaster intensity and the covariance between debt to GDP ratios, fiscal policy, growth and aid. Aid relief is found to play a significant mitigating role.

Insuring Against Hurricanes: What Is To Be Gained For Caribbean Islands To Join A Cross-Country Insurance Scheme?

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Hurricanes cause considerable losses in the Caribbean and have been shown to be detrimental to economic growth. We investigate the extent to which natural catastrophe risk can be diversified across Caribbean countries in a common pool, and thus the advantages of entering a cross-country risk insurance scheme like the Caribbean Catastrophe Risk Facility. To this end we use over 150 years of historical hurricane track data and a loss estimation model for Caribbean islands to produce a distribution of losses in the region. As the hurricane losses are rare events with heavy tails, we model their dependence across islands by experimenting with various multivariate peaks over threshold (POT) models, identifying their differences. The results are then used to evaluate the risk contributions of each of the countries to the overall risk of the pool, and to assess the role that model uncertainty can play in pricing catastrophe risk.

Analysis and Forecasting Of Climate Variability during 37 Years (1973 & 2016); and the Consequences to the Future of Agriculture in Belize (2017 To 2054)

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This study consist of analysing the Belizean climate variability in regards to temperature and rainfall during the last 37 years (1979-2016); and use it as a benchmark to forecast for the next 37 years (2017 -2054). The results of the past 37 years; has lead us to understand and make emphasis on the negative and future impact of climate variability that will cause water deficit (Rainfall), food shortage, decrease in supply and demand of commodities, poor crop yield, inflation; and finally; reduction in food quality. This on a whole; poses a high risk on Food Security on the Belizean Population, the region and the wider horizons.

The scientific document can serve as reference for future analysis considering that related information is null or limited. Additionally; the statistical analysis serves as a platform for correlation interpretation, forecasting models designs, statistical significance as well as the understanding of the events related to climate change. This research also serves as a guide or reference for the establishment of public policy for the planning, implementation and control strategies of mitigation and adaptation to minimize the negative effects or consequences of climate change on agriculture in Belize.

This consideration is based on the fact that the majority of the causes of climate change is stimulated by anthropogenic factors; in other words caused by mankind; specially in developed countries, where industrial activities should be done base on efficient carbon (Low carbon) from now on according to confirmed information from the Conference of Parties (COP 17), which occurred in Durban (South Africa). Moreover, the Conference of Parties (COP 17), decide to extent the Kyoto Protocol and create a new roadmap for a climate agreement. The agreement that was reached is to include a second period for the Kyoto Protocol as a unique instrument and it should only be applied to developed countries excluding the United States of America (USA).

Keywords: Agriculture in Belize, Climate Change, Mitigation, Adaptation, Forecasting, Negative Consequences, Kyoto Protocol, Conference of Parties (COP 17).

SESSION 5

Sub-Theme: Economic Structure and Performance

Investigating the Optimal Level of Government Spending to Maximize Economic Growth in Jamaica

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The low economic growth experienced by Jamaica over the past twenty years has ignited the debate about the appropriate level of the Government's involvement in the economy. In this regard, the paper uses a non-linear regression model as well as an error correction model to determine the optimal level of Government's spending that maximizes economic growth for the country. The study utilizes quarterly data from 1993 to 2016. Based on the results, the paper finds that the optimal level of Government expenditure for Jamaica is 33.2 per cent of total output. This result is considerably greater than the average level of Government expenditure over the review period. In addition, the findings supports the proposition that a less austere level of Government spending can result in an improvement in economic growth.

JEL Classification Codes: E62 and F63
Keywords: Government Spending, Economic Growth, Robust Least Squares Model

The Economic Growth Impact of Tourism in Small Island Developing States – Evidence from the Caribbean

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Tourism has long been a staple of the Caribbean economy as it is a viable option for economic growth, focusing on its landscape and natural environmental resources. Even a modest tourism industry can have a significant impact for the relatively small Caribbean islands. Over the past few years, empirical studies have shown a positive relationship between tourism and economic growth, however there remains limited research on the growth impact in the wider Caribbean. This article utilizes panel data estimation techniques over the period 1980 to 2015 to focus on the tourism-economic growth nexus in several Caribbean economies. Tourism is found to have a positive and significant effect on GDP growth. Consistent with previous contributions, this finding is indicative of the region's continued reliance on the industry.

JEL Classification Codes: F31, F43, L83, O54, Z3,

Keywords: Economic Growth, Tourism expenditure, Caribbean economies, Instrumental variables, Dynamic Generalized Method of Moments

Assessing the Total Economic Value of Barbados Welchman Hall Gully

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The objective of this paper is to derive the total economic value of Welchman Hall Gully, a tourist site which contributes in its own right to the economic prosperity of Barbados. The objective is achieved through the derivation of use and non-use values of the amenity. Despite its limitations, contingent valuation method (CVM) is of interest to derive such values. The data for analysis come from a well-crafted CVM survey. Using statistical tools and Tobit modelling, the paper finds that the additional annual use value could reach BDS$45,924.00 or US$22,962.00 and the yearly non-use value could be BDS$72,765.00. Taking the present entrance fees into account, the total economic value of the site could reach BDS$289,289.00. Income size, love for the environment, gender and level of education positively affect willingness to pay for an additional entrance fee. Gender, age and membership in a non-governmental organization, sensibly affect willingness to contribute to a fund for the preservation of the site.

The results of the valuation coupled with cost information can motivate the manager of the site in identifying policy or mechanisms by which the site can be maintained and/or improved owing to smart use of funds generated from the utilization of the site.

***JEL Classification Codes**: O5; Q2.*

***Keywords**: Welchman Hall Gully; non-market good; private provision of public good; environmental good; contingent valuation method (CVM).*

Fiscal Rules in the Monetary Union of Curaçao and Sint Maarten

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This paper contributes to academic literature in two ways. First, the rule-based fiscal framework of the Euro Area is compared to that of the Monetary Union of Curacao and Sint Maarten to pinpoint what can be learned from the Euro Area. Second, based on multiple linear regression models, the paper examines whether the rule-based fiscal framework of the Monetary Union of Curacao and Sint Maarten has succeeded in generating fiscal discipline and economic growth in Curacao.[1] A conclusion is that fiscal rules seem to generate fiscal discipline, while limiting creative accounting by the Curacao government. However, the fiscal rules seem to contribute negatively to the real GDP growth rate of Curacao, indicating that other macroeconomic areas[2] also should be addressed to foster economic growth.

SESSION 6

SUB-THEME: FINANCIAL SYSTEM CHALLENGES

1 Due to lack of data for Sint Maarten, this paper focuses only on Curaçao.

2 Other macroeconomic areas include, among other things, improving competitiveness, improving the investment climate, and mobilizing the labor market.

An Analysis of Private Sector Credit Growth in Belize : A VECM Approach

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The aim of the paper is to identify the long run constraints to domestic private sector credit growth in Belize. The paper employs two approaches: a Vector Error Correction Model using aggregated data, and panel cointegration regression techniques, FMOLS and DOLS, to analyse bank-specific data at the sectoral level. The findings show that private sector loan growth in Belize is primarily influenced by supply conditions. At both the aggregate and bank-specific levels, capital levels are identified as a significant and binding constraint to loan growth. At the sectoral level, the interaction of market share and capital was found to be a key determinant of credit growth as well-capitalized banks that held significant market share in a particular segment was able to drive credit at a faster pace despite the slowdown in the economy.

Asymmetries in Exchange Rate Pass-through and Monetary Policy Principle: Some Caribbean Empirical Evidence

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The study finds that using linear models to examine the exchange rate pass-through to prices is generally fraught with serial correlation, heteroscedasticity and functional instability problems. As a solution to these problems, we employed nonlinear or asymmetric model to correct most of

the problems for six non-members of Eastern Caribbean Currency Union (ECCU). Results show three threshold values for The Bahamas and Jamaica, and two threshold values for the rest of the countries. Previous month prices are found to be the threshold variable for all the countries, and they range from -5.2 percent in The Bahamas to 63.3 percent in Trinidad-Tobago during a low inflation/prices regime, and from -6.2 percent in The Bahamas to 61.2 percent in Trinidad-Tobago during high inflation/prices regime. Foreign prices drives most increase in prices in Jamaica and Guyana, and results in least increase in Belize. World oil prices result in least increase prices in Belize. Their effects on prices are insignificant in Guyana, Jamaica and Trinidad-Tobago, and rather decrease prices in The Bahamas. Depreciation in all the countries are caused by increase in prices, although the effect is strongest in The Bahamas, but occurs at nearly the same rate in Belize and Trinidad-Tobago. Depreciation drives up price increase in all the countries, while appreciation drives down prices in all the countries, with the exception of Belize where it is insignificant. The monetary policy principle (MPP) is ineffective in all the countries. The results from the MPP where 91-day Treasury Bills rates are used as the primary operating target have the right signs in most of the countries, but their effects are all insignificant. Thus, exchange rates are the most effective operating targets for central banks in these countries.

Keywords: exchange rate pass-through, exchange rates, monetary policy principle, nonlinear models

Liquidity Risk Measurement and Modelling: Evidence from the Trinidad and Tobago Banking System

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This paper studies liquidity risk in the banking system of Trinidad and Tobago. First, we examine liquidity metrics banks traditionally use to manage their liquidity risk and discuss Basel III challenges for the banking system. We find that inefficiencies in the funding markets force banks build large liquidity buffers and hoard liquidity. But while banks' liquidity reserves appear to be high, liquidity risk pricing adjustments of reserves suggest banks are less liquid.

We develop a liquid model using a unique dataset of balance sheet and treasury data for a commercial bank. We conduct liquidity stress testing of the bank using the model with different scenarios. Our results reveal liquidity risk materialise at fast rate that will generate liquidity squeeze for the bank.

Overall, our results suggest that lender-of-last-resort policy is important for the management of liquidity risk in the bank system and current in-use liquidity risk metrics and Basel III parameters need to be re-calibrated to reflect the microstructural nature of the asset and funding markets in which banks operate in Trinidad and Tobago.

JEL Classifications Codes:

Keywords: Liquidity Risk; Liquidity Stress Testing; Basel III; Trinidad and Tobago Banking System

SESSION 7

SUB-THEME: FISCAL AND DEBT MANAGEMENT ISSUES

MEASURING FISCAL SPACE IN SMALL OPEN FINANCIALLY INTEGRATED ECONOMIES

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This paper proposes a measure of fiscal space that is especially useful for the large number of countries that are small, open to trade in goods and services, and financially integrated into world capital markets (Small Open Financially Integrated Economies, or SOFIEs). In these countries there is a very strong link between Government's deficit and how that deficit is financed, on the one hand, and the balance of external payments, on the other. The fact that SOFIEs' financial systems are intimately linked into the international financial market means that exchange controls cannot be used for foreign exchange rationing in the Mundell-Fleming model, and there is therefore a direct link between the domestic money market and the market for foreign currency. The link to the fiscal balance comes about because the financing of Government is almost always the dominant factor affecting the supply of money and the domestic liquidity situation. The resulting causal link between the fiscal stance and the overall balance of payments provides a practical measure of the limits of fiscal expansion, and can therefore be used to measure the amount of space Government has for expansionary policies.

The conventional approach to measuring fiscal space is based on the notion that there is an upper limit to the national debt, a point at which the cost of servicing the debt is such a large percentage of GDP that the opportunity cost of debt servicing becomes politically infeasible. This has proven problematic for fiscal policy, because the short-term political benefit of debt-

financed fiscal expansion often outweighs the perceived cost of servicing that debt, especially when elections are imminent.

The alternative proposed in this paper measures the cost of fiscal expansion in terms of the impact it has on the balance of payments, the level of foreign reserves of the central bank and the central bank's ability to manage the exchange rate. This is a powerful measure, because the level of foreign reserves is a principal concern of all countries, regardless of their exchange rate regime. The level is of particular importance to SOFIEs, because they have a strong incentive to manage the exchange rate, if only to ensure that it is not subject to wild fluctuations.

This paper develops a model of the impact of fiscal expansion on the balance of payments, and uses it to measure fiscal space in a selected number of SOFIEs.

SUSTAINABLE FISCAL STRATEGIES UNDER CHANGING DEMOGRAPHICS: A POLITICAL ECONOMY PERSPECTIVE

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This paper develops an overlapping generations model to evaluate, first, the steady state growth-maximizing level of public debt around which the economy needs to stabilise; second, how the optimal level of public debt varies as a function of key population parameters; third, how fiscal rules designed to stabilise the economy around that debt level need to vary with the population parameters; and, fourth, how the model performs as a reasonable and plausible representation of the economies that we might be concerned with. Finally, following the diminished fiscal space and flexibility that is created by deteriorating population parameters, some political economy perspectives are offered.

JEL Classification Codes: E62, H63, J11
Keywords: Fiscal rules, public debt, economic growth, demographic changes

Grenada's Home-Grown Structural Adjustment Program (2014-2016): Reflections and Key Takeaways

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This Paper examines Grenada's experience under the IMF-supported Home-grown Structural Adjustment Program (2013-2017). It starts with a review of the socioeconomic situation prior to the Home-grown Structural Adjustment Program, which sets the stage for the discussion on the rationale for the Program. Section two discusses the design, key features and objectives of the Program, while section three examines the salient socioeconomic results achieved. The key lessons distilled from the experience are discussed in section 4. Section 5 concludes.
JEL Classification Codes: H10, H12, H60

SESSION 8

Sub-Theme: Financial System Challenges

The Impact of Banking Deregulation on the Banking System: Exploring the facts for Barbados

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It is generally agreed that a healthy banking system is a potential driver of a country's economic growth. This means that knowing the factors which affect, among others, the efficiency and competitiveness of banks is ultimately important as these factors can to a large extent explain the dynamics of a country's economic growth. It is also, however, important to acknowledge that some factors have rather ambiguous effects on the banking system. One such factor is bank deregulation as its impact can go either way (see literature). The present paper, which is part of a larger project entitled "The Impact of Banking Deregulation on the Banking System: A Case Study of Barbados, 2007.I -2017.I, attempts to highlight and explain the facts embedding the responses of banking system to bank deregulations (April 8, 2013, and April 21, 2015) in Barbados. Of particular importance, it examines whether the facts match the expectations. Descriptive statistics including correlations are the main tools used to uncover and examine the facts. Preliminary results indicate a negative correlation between commercial bank deposits and credit union deposits in the period of June 2016 to March 2017, that is, one year after the full removal of the interest rate floor on saving rates. Likewise for the relationship between commercial bank deposits and savings deposits. The relationships are otherwise positive in other periods. The interest rate spread has been trending upwards due to deposit rate adjustments. After the occurrence of the partial deregulation event of 2013 the discount rate was on a decline and compounded with the second event, rates achieved pre-financial crisis levels; reaching rates of 2%. This decline was short lived since from January 2016 to December 2016 the discount rate increased by 95% from 1.76% to 3.44% and since then it has been oscillating between 3.1% and 3.5%. These preliminary results question the wisdom of deregulation.

The Impact of Risk Management on the Financial Performance of the Commercial Banking Sector in Barbados

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Commercial banks in their role as financial intermediaries utilize their own balance sheets to absorb the risks of their customers. The risk-return relationship is well known; the higher the risk incurred, the higher potential returns and indeed probable losses. This paper seeks to examine the relationship between risk management and financial performance of the commercial banking sector in Barbados using quarterly data for the period 2000-2015. The empirical results indicate that Capital risk, Credit risk, Liquidity risk, Interest rate risk and Operational risk have statistically significant impacts on financial performance. The only risk variable which does not derive this result is Country risk. In addition, of those variables which proxy external factors, only GDP growth has a statistically insignificant influence on financial performance. Credit risk exerted a negative impact on the banks' financial performance, thus the banks must ensure they adopt appropriate measures to minimize the impact of this risk. Higher levels of capital impacted positively on the banking sector's profitability. However, banks must play close attention to their liquidity management and identify alternative measures to manage operational risk. They must also closely monitor the effects of macroeconomic variables on their profitability.

Factors Affecting Bank Profitability for Clearing Domestic Banks in the Bahamas

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The aim of this paper is to determine the main contributors to the profitability of the domestic banks in The Bahamas, using the random effects model. The model utilized quarterly, data spanning the period 2004 to 2014, for the seven (7) clearing banks in the country. The results of the model showed that the profitability of commercial banks within the Bahamas is principally due to internal, bank level factors.

Hike in Commercial Banking Fees in CARICOM

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The paper investigates the causes of the hike in commercial bank fees in the CARICOM area. We investigate whether the hike stems from macroeconomic factors and compare commercial banking fees levied across the region. The paper investigates the conditions under which banking fees in the region change. In the end, we found that the factors giving rise are not uniform across the region. To further explore we use VEC and found that the bank fees have very little relations to the economic fundamental but instead the relation may be price following.

SESSION 9

Sub-Theme: Economic Structure and Performance

Strategic Asset Allocation for a Savings and Stabilization Fund: The Case of Suriname

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This paper discusses an asset and liability management (ALM) framework and its effectiveness in generating optimal returns for Sovereign Wealth Funds (SWFs), with special reference to the

Saving and Stabilization Fund of Suriname (SSFS). It proceeds in three steps. First, it considers that ALM complies with the investment and risk management guidelines as dictated by the General Accepted Practices and Principles (GAPP), the regulations that set out best practices for SWFs. Second, with the case of Trinidad and Tobago we argue that with appropriate governance, sound investment and risk management practices can result in sound strategic asset allocation (SAA)1 and thirdly used to construct an investment strategy for the SSFS. To test this, we use several risk tolerance scenarios to thereafter. The results show, that the main sources of funding for the SSFS will be windfall transfers from mining revenues.

Assessing the Exchange Rate Pass-Through to Inflation: The Case of Trinidad and Tobago.

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Movements in the nominal exchange rate have incited concerns regarding the pass through of fluctuations unto domestic prices. The exchange rate pass through (ERPT) to inflation is relevant for a small, open and developing economy like Trinidad and Tobago that is heavily reliant on imported goods for intermediate and final consumption. The recent depreciation episode of the exchange rate coupled with the limited foreign exchange supply has prompted an investigation of the exchange rate transmission to both domestic food and headline inflation rates. The paper examines the relationship, speed and magnitude of the ERPT using quarterly data between 1995 and 2016 of variables such as the nominal effective exchange rate (NEER), Gross Domestic Product, international commodity prices, money supply, and a dummy variable to represent black market activity. Through the employment of a Vector Error Correction Model (VECM), impulse response function and variance decomposition, the authors found that transmission to domestic inflation rates were faster than previous research, taking four quarters (one year) to pass through. Based on the results it is recommended that monetary and exchange rate policy should be conducted in tandem with one another.

Economic constraints and stagnation in the Caribbean: Some Theoretical Explanations and a Way Forward

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This paper develops a model along neo-Kaleckian lines to examine the relationship between debt accumulation, the external sector deficit and lack of robust growth in the Caribbean. The traditional response to the high debt burden has focused on raising taxes and curbing expenditure, despite sluggish domestic and external demand, in order to reduce government's borrowing requirements and stabilise the debt overhang.

The paper presents a carefully worked through model aimed at determining how the trade deficit drives debt accumulation and its impact on growth and income distribution in the region. The focus is placed on the external imbalance to determine how important it is in relation to the current challenges facing the region. The paper also examines the role of labour productivity in this context. The model will also be tested using available data for two Caribbean countries within a structural VAR framework.

Sacrifice Ratio: An Estimation for the Haitian economy with a Structural VAR

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It is generally accepted that price stability is one of the essential conditions for creating and maintaining a stable macroeconomic environment that can foster sustainable long-term growth. Indeed, institutions such as central banks typically carry out policies designed to smooth out fluctuations of the inflation rate. However, in the short run, these restrictive policies entail sometime substantial costs in term of output loss and unemployment. This paper investigates the output costs of disinflation, i.e. the sacrifice ratio in the context of the Haitian economy using a structural VAR model (SVAR). The results show a sacrifice ratio low and positive, obtained from the cumulative response over six (6) periods. According to these results, a steady decline in inflation of one percentage point following a demand shock implies a nearly 0.97 per cent deviation of the gross domestic product (GDP) below its trend or long-term level.

Keywords: Sacrifice ratio, demand shock, disinflation, structural VAR model, exchange rate.

SESSION 10

Sub-Theme: Financial System Challenges

Optimal External Reserves in the Caribbean

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The inherent vulnerability of small open economies, especially on the external accounts, means that the adequacy of international reserves has always been an important policy focus for this type of economy, in the context of the need to strengthen their resilience to negative shocks. In the Caribbean, structural weaknesses and high exposures to international shocks have meant that the accumulation of adequate international reserves tends to be one of the main policy objectives in these economies. Recent events indicate, however, that many countries seem to have underestimated the level of reserves required to meet contingencies and boost confidence. These studies also indicate that the pace of accumulation has slowed in recent years possibly driven by the costs of holding reserves in a low interest rate environment and weaknesses on their external accounts. This paper therefore seeks to determine the optimal level of reserves for select Caribbean countries in the context of the structural features of these economies and the new international environment. It also seeks to distil some policy recommendations for best practices in the management of the external reserves based on the experiences of the region and other small open economies.

A preliminary assessment of Cryptocurrencies in the Caribbean – A look at Central Banks responses

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The idea that a central bank could issue a type of "digital cash" has become more relevant with the emergence of cryptocurrencies in 2009. Central banks have been looking at ways to move to virtual money before the advent of cryptocurrencies. The distributed ledger technology (DLT) on which cryptocurrencies are based on has revolutionize the trust and interest of Central banks to create their own Central bank Digital Currency (CBDC) since it has shown that it can allow central banks to effectively create its own version of a cryptocurrency. Central banks around the world are currently devoting resources to research the concept of their own CBDC, and are examining the possible advantages and disadvantages it may have for their economies.
This study is a preliminary examination of how cryptocurrencies has begun to change the financial architecture of the Caribbean region as we attempt to track the reactions and possibilities of Caribbean Central Banks having their own cryptocurrency.

Keywords: Cryptocurrency, Central Bank Digital Currency, Distributed Ledger Technology

The Impact of De-risking on Caribbean Economies and Long-Term Policy Options for the Region

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The loss of corresponding banking relationships (CBRs), referred to as "de-risking", is an evolving issue that has widely affected banks within the Caribbean. The de-risking episode can have adverse consequences for the region, since it has the potential to reduce the size of the banking sector, as firms will be forced to either close or streamline operations due to the loss of specific business lines. Therefore, the study found that a coordinated regional approach is pivotal to addressing the loss of CBRs. The study also identified several other appropriate policy actions that can be undertaken by the region to stem the declining CBRs.

SESSION 11

SUB-THEME: INVESTMENT AND TRADE ISSUES

TESTING THE EXPORT-LED GROWTH HYPOTHESIS: THE CASE OF SURINAME

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The export-led growth hypothesis posits that exports are the main driver of economic growth. In recent decades, exports of especially mining products have contributed notably to growth of the Surinamese economy. This paper seeks to determine the extent to which export-led growth hypothesis applies to Suriname. A Dynamic OLS is employed with data over the time period 1971 to 2015 to estimate the impact of exports of goods on economic growth over the long run. The results reveal that exports are a crucial determinant for macroeconomic growth. This paper contributes to our understanding of the economic process in Suriname and adds value to the

literature because as far as is ascertained no research has been published on this subject for Suriname.

PRICE-SETTING BEHAVIOUR IN THE TOURISM SHARING ECONOMY: A HEDONIC PRICE ANALYSIS OF AIRBNB LISTINGS IN THE CARIBBEAN

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This study investigates the price-setting behaviour of Airbnb hosts in the Caribbean tourism sharing economy. We employ a hedonic pricing approach, assuming that the listing price of an Airbnb accommodation is a function of its characteristics, such as amenities, reputation, and site, as well as the country where it is located. The results indicate that most attributes positively and significantly affect prices setting in Caribbean destinations, with effects varying across the price spectrum. However, listings with a larger number of ratings were found to be associated with lower prices, which may be an artefact of tourists' preferences for cheaper sharing accommodations. On a country level, listings in countries with greater economic and infrastructural development, but weaker exchange rates have higher prices. On the other hand, prices are lower in countries where there is more competition for customers. This study provides useful tools for Airbnb, and possibly other P2P platforms to help guide hosts in their price-setting behaviour.

Estimating General Equilibrium Trade Policy Effects: Caribbean Community (CARICOM)

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This paper uses a structural gravity model as a basis for a general equilibrium framework to investigate the importance of international borders, regional trade agreements (RTA) and the potential impact of deeper integration in the form of a currency union within CARICOM. Using panel data for the period 1986-2001, with 3 year intervals, the gravity model is estimated using Poisson Pseudo Maximum Likelihood (PPML) and subsequently used to derive general equilibrium effects. We find that CARICOM is trade-creating within The Region and there is evidence suggesting that currency depreciation of CARICOM members increases The Region's exports to the rest of the world. Most importantly, CARICOM is essential for member states with the smallest economies and deeper integration in the form of a common currency could be welfare improving for all CARICOM members, at least as it relates to trade.

Keywords: Gravity Model, CARICOM, Regional Trade Agreement, Exchange Rate, Poisson Pseudo Maximum Likelihood (PPML) General Equilibrium

SESSION 12

Sub-Theme: Financial System Challenges

Estimating the Liquidity-Profitability Frontier: The Credit Union Perspective

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Credit unions' loan to deposit ratio has shown a dramatic decline in recent times in Barbados. The most notable inflection occurred following the liberalization of the interest rate floor imposed by the central bank by on commercial banks. The natural corollary is that savers shifted their funds from banks to higher yielding products offered at the credit unions. As deposit growth outpace the growth in the loan portfolio credit unions are either forced to seek other viable investment options or be satisfied with the consequent pick up in excess liquidity.

This study seeks to establish the nexus between the loan to deposit ratio and profitability within the credit union movement and to ascertain wither there is an optimal risk adjusted range for the loan-to-deposit ratio. To complete the analysis a disaggregated approach to forecasting the loan-to-deposit ratio was adopted. The study employs regression based analyses on quarterly consolidated data from 1990 to 2017 t establish these relations.

JEL Classification Codes*: E1; G2*

Keywords*: Credit unions, loan to deposit ratio, profitability, forecasting*

An Analysis of Performance of Commercial Banks in Belize During Post Global Recession Period

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The aim of this study was to evaluate the performance of commercial banks in Belize during the period of 2008-2015 using CAMEL approach. The data for the major commercial banks were collected from Central Bank of Belize and the macroeconomic data were collected from the Statistical Institute of Belize. The panel data were analysed by using SPSS. The results of the study showed that the capital adequacy for all the banks were higher than the legal requirement of 9% with Scotia bank maintaining the highest of over 40% in the past five years. The ratio of Non-Performing Loans to Total Loans (NPL/TL) was increasing gradually from 2008 to 2010 and started to decrease from 2011 to 2015 for all the banks. The NPL/TL was significantly higher for Heritage bank and Belize Bank compared to the other banks. The ROE and ROA were in the positive territory for Atlantic Bank and Scotia Bank during the period of study, however there was a decreasing trend throughout the study period. The ROE and ROA were in negative territory between 2008 -2010 for Heritage bank, 2013 – 2015 for First Caribbean Bank and 2010 – 2014 for the Belize Bank. The cash to deposit ratio was consistently low for Scotia Bank with around 20% whereas it was consistently higher for the First Caribbean Bank and reached over 50% from 2012 onwards. The correlation analysis showed that there was strong negative relationship between non-interest expense to total loan and ROE and ROA. As expected there was a negative correlation between NPL/TL and ROE and ROA. There was no significant influence of GDP and Inflation on ROE and ROA of the commercial banks. The composite analysis of the CAMEL criteria used in this study for the five banks revealed that Scotia Bank and Atlantic Bank performed better than the other banks.

JEL Classification Codes: E44, G21, G32
Keywords: Financial Performance, CAMEL Analysis, Commercial Banks, Global Recession

Coordination of Monetary and Fiscal Policies in Trinidad and Tobago

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The purpose of this paper is to investigate the extent of coordination between monetary and fiscal policies in Trinidad and Tobago over the period 1967 – 2016. To achieve this objective, the paper first adopts the Granger causality and cointegration tests to determine whether these policies are implemented independently. Testing for independence is necessary since only independent institutions are in a position to engage in economic policy

coordination. If independence is observed, the extent of coordination is then estimated using: (i) the Set-Theoretic Approach (STA); and (ii) the vector autoregressive (VAR) modelling framework. Our analysis reveals that policy coordination has been weak throughout most of the review period. Coordination improved following the 2008/09 global financial crisis as both the fiscal and monetary authorities came together to revive the economy. The results point to the need for the policy-making authorities to improve coordination to enable sustainable long-term growth with low inflation in the country.